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09/234,490	01/21/99	IRIE	K 1082-1027/JD

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EXAMINER

QUARTERMAN, K

ART UNIT

PAPER NUMBER

2879

DATE MAILED:

11/08/00

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

09/234,490

Applicant(s)

IRIE ET AL.

Examiner

Kevin Quarterman

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

Status

- 1) ☒ Responsive to communication(s) filed on 21 January 1999.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 January 1999 is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- a) ☒ All b) ☐ Some * c) ☐ None of the CERTIFIED copies of the priority documents have been:
1. ☒ received.
2. ☐ received in Application No. (Series Code / Serial Number) _____.
3. ☐ received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. & 119(e).

Attachment(s)

- 15) ☒ Notice of References Cited (PTO-892)
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3.5.
- 18) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 19) ☐ Notice of Informal Patent Application (PTO-152)
- 20) ☐ Other: _____.

DETAILED ACTION

Specification

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.
2. The following title is suggested: --Gas Discharge Display Device with a Particular Filter Characteristics--.
3. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Drawings

4. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference sign(s) not mentioned in the description: Elements 10, 20, and ES of Figure 4. Correction is required.
5. Applicant is required to submit a proposed drawing correction in reply to this Office action. However, formal correction of the noted defect can be deferred until the application is allowed by the examiner.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the first paragraph of 35 U.S.C. 112:

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The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

7. Claim 1 is rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The claim states "a color to be reproduced...for displaying a white pixel is set to be different from a white color intended for display." This limitation is unclear for the specification doesn't give a clear explanation but simply states "One pixel for display is composed of three sub-pixels adjacently placed in a row direction and having different emission colors (Page 14, 2nd Paragraph)." The specification doesn't give a clear description of the claimed subject matter.

8. Claims 2 and 9 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Claim 2 states "a structural condition of a display element...is different from structural conditions of other display elements." The Examiner is unsure of what other display elements Applicant is referring to. Claims 2 and 9 both state "a light-emission intensity of the display element corresponding to the first fluorescent substance is higher than a light-emission intensity of the display element corresponding to the first fluorescent substance." This limitation is unclear for

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the specification states "the relative ratio of the maximum luminous intensities...is set in such a manner that the luminous intensity within the attenuated wavelength region is a little stronger... (Page 13, Last Sentence)" but doesn't explain exactly what the luminous intensity is stronger than. The specification doesn't give a clear description of the claimed subject matter.

9. Claim 3 is rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The claim states "the structural condition is an area of the electrode." This limitation is unclear for the specification states "the electrically conductive transparent film 241 above the R cells protrudes into the surface discharge gap and, in accordance with, the metal film 242 is formed to have a locally wider portion, as shown in Fig. 9" (Page 23, Lines 4-18) but doesn't specifically point out what the metal film is wider than. The specification doesn't give a clear description of the claimed subject matter.

10. Claim 4 is rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The claim states "the area of the electrodes in the display element corresponding to the first fluorescent substance is larger than an area of the

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electrodes in the display element corresponding to the first fluorescent substance.” This limitation is unclear for the specification states “the area of the electrodes in the red display element is larger than an area of the electrodes in the red display element.” The specification doesn’t give a clear description of the claimed subject matter.

11. Claims 5 and 6 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Claim 5 states “the structural condition is an area of a light-emission region of the fluorescent substance.” Claim 6 states “the area of the light-emission region of the fluorescent substance layer in the display element corresponding to the first fluorescent substance is larger than an area of the light-emission region of the fluorescent substance layer in the display element corresponding to the first fluorescent substance.” These limitations are unclear for the specification states “the area of the light-emission region of the fluorescent substance layer in the red display element is larger than an area of the light-emission region of the fluorescent substance layer in the red display element” (Page 23, Lines 18-23). The specification doesn’t give a clear description of the claimed subject matter.

12. Claims 7 and 8 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to

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make and/or use the invention. Claim 7 states "the structural condition is a thickness of the dielectric layers." Claim 8 states "the thickness of the dielectric substance layers in the display element corresponding to the first fluorescent substance is smaller than a thickness of the dielectric substance layers in the display element corresponding to the first fluorescent substance." These limitations are unclear for the specification states "the thickness of the dielectric substance layers covering the electrodes in the red display element is smaller than a thickness of the dielectric substance layers covering the electrodes in the red display element" (Page 24, Lines 12-18). The specification doesn't give a clear description of the claimed subject matter.

13. Claim 13 is rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The claim states "the filter has a characteristic such that a transmissivity of a longer wavelength side of a red wavelength region is higher than a transmissivity of a shorter wavelength side of the red wavelength region." This limitation is unclear for the specification doesn't give a clear description of the claimed subject matter.

14. Because the Examiner doesn't understand the limitations as stated above, those claims are being examined omitting those limitations.

Claim Rejections - 35 USC § 102

15. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

16. Claims 1-9, 11-14, and 16-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Wada et al. (US Patent 4,626,071).

17. Wada, in Figure 4a, shows a gas-discharge display panel with multi-layered filters RF, GF, and BF covering the respective R (red) cells, G (green) cells, and B (blue) cells (Column 10, Lines 5-14). Wada also discloses a pair of electrodes (Fig. 4a, Elements DA and C). Also in Figure 4a, there is a pair of glass substrates (FG & RG) and the filters are shown being formed directly on the rear surface of the front glass plate (FG). Wada also discloses the filter is uniformly or selectively applied on the front or the rear surface of the front glass plate (Column 13, Lines 29-34). Wada also discloses the filter is protected by being covered with a transparent layer (Column 12, 2nd Paragraph) and that granular pigments are employed as for the filter (Column 1, Lines 45-46).

18. The Examiner takes Official Notice that the functional limitation “a characteristic of attenuating an intensity of light...” stated in claim 11 has not been given patentable

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weight because it is narrative in form. In order to be give patentable weight, a functional recitation must be expressed as a "means" for performing the specified function, as set forth in 35 USC 112, 6th Paragraph, and must be supported by recitation in the claim of sufficient structure to warrant the presence of the functional language.

19. In regards to claims 12 and 14, Figures 1-3 of Wada shows the filter with an average transmissivity of light in a green wavelength region is lower than that in a blue wavelength region and higher than that in a red wavelength region. The figures also show a wavelength providing the lowest transmissivity has a value within a range of about 560 to 610 nanometers.

Claim Rejections - 35 USC § 103

20. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

21. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wada in view of Yoshida et al. (US Patent 5,667,888).

22. Wada discloses all of the limitations of claim 1 as stated above. Wada fails to exemplify the filter having a color correction function.

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23. Yoshida, in the related art of color filters, discloses color correction filters for a VTR camera. Yoshida uses color corrections due to the large difference between human visibility and the sensitivity of a photoelectric conversion element (Column 2, Last Paragraph).

24. Therefore, it would have been obvious to a person having ordinary skill in the art to provide a filter with a color correction function as taught by Yoshida in the display device of Wada for increasing a color temperature value.

25. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wada in view of Suzuki et al. (US Patent 5,024,923).

26. Wada discloses all of the limitations of claim 1 as stated above. Wada fails to exemplify the absorption peaks appear at least in a wavelength region of 470 to 520 nanometers and in a wavelength region of 560 to 610 nanometers.

27. Suzuki, in the analogous art of optical filters, discloses an infrared absorbent composition used as an optical filter. Suzuki discloses the largest wavelength absorption peak of the base material is in the range from about 400 to 800 nanometers (Column 56, Lines 58-65), that includes the ranges of 470 to 520 and 560 to 610 nanometers. Suzuki uses this filter to absorb from far infrared light to near infrared light

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having wavelengths of 600 nanometers or longer without adversely affecting the transmission of visible light (Column 1, 1st Paragraph).

28. Therefore, it would have been obvious to a person having ordinary skill in the art to provide a filter composed of a base material as taught by Suzuki in the display device of Wada for separating the emission of blue color from the emission of green color.

29. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wada in view of Asano et al. (US Patent 6,008,582).

30. Wada discloses all of the limitations of claim 1 as stated above. Wada fails to specifically point out the fluorescent substance for red is composed of (Y, Gd) BO₃ : Eu; the fluorescent substance for green is composed of Zn₂SiO₄ : Mn; and the fluorescent substance for blue is composed of BaMgAl₁₀O₁₇.

31. Asano, in the same art of display devices, discloses suitable phosphor substances for red, green, and blue are (Y, Gd) BO₃ : Eu, Zn₂SiO₄ : Mn, and BaMgAl₁₀O₁₇, respectively (Column 6, Lines 38-46). Asano uses these compositions for emitting light of desired color.

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32. Therefore, it would have been obvious to a person having ordinary skill in the art to provide fluorescent substances for red, blue, and green with the compositions taught by Asano in the display device of Wada for emitting multiple colored light.

33. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wada in view of Raber et al. (US Patent 4,803,402).

34. Wada discloses all of the limitations of claim 1 as stated above. Wada does not exemplify a discharge space filled with a Penning gas composed of neon and xenon.

35. Raber, in the same art of display devices, discloses a Penning mixture of neon doped with argon or xenon (Column 4, Lines 4-44). This Penning mixture is used for emitting light of an electric field near the projected intersection of electrode wires (Column 3, Lines 33-41).

36. Therefore, it would have been obvious to a person having ordinary skill in the art to utilize the Penning mixture as taught by Raber in the gas discharge display device of Wada for emitting light onto the display panel.

Conclusion

37. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Zieba et al., US Patent 5,811,923, discloses a plasma display panel with infrared absorbing coating. Suzuki, US Patent 5,541,476, discloses an

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image reader. Vincent, US Patent 5,144,498, discloses a variable wavelength light filter and sensor system. Westhaver, US Patent 5,940,231, discloses an underwater color correction. Yoshida et al., US Patent 5,667,888, discloses color filters. Seddon et al., US Patent 5,218,473, discloses a leakage-corrected linear variable filter. Fukaya et al., US Patent 4,700,080, discloses a color photosensor utilizing color filters. Kreutzig, US Patent 4,542,959, discloses a color correction filter. Ueoka et al., US Patent 6,034,474, discloses a color plasma display panel with electromagnetic field shielding layer. Funada, US Patent 5,838,106, discloses a plasma display panel with color filter. Mitomo, US Patent 5,838,105, discloses a plasma display panel including color filters. Lepselter, US Patent 5,654,727, discloses a gas discharge flat panel display. Kwon, US Patent 5,396,149, discloses a color plasma display panel. Haraga et al., US Patent 5,126,620, discloses a display element. Miyake et al., US Patent 5,086,297, discloses a plasma display panel and method of forming fluorescent screen thereof. Lee et al., US Patent 5,102,213, discloses a narrow band selective absorption filter.

Contact Information

38. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Quarterman whose telephone number is (703) 308-6546. The examiner can normally be reached on M-F (8-4:30).


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel can be reached on (703) 305-4794. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7382 for regular communications and (703) 308-7382 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

kq 
November 6, 2000


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